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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.         | CONFIRMATION NO.       |
|--|-------------|----------------------|-----------------------------|------------------------|
| 10/676,800   | 09/30/2003  | Margaret Ann Bernal  | SVL920030038US1             | 2626                   |
| 47069 7590 06/28/2007<br>KONRAD RAYNES & VICTOR, LLP<br>ATTN: IBM54<br>315 SOUTH BEVERLY DRIVE, SUITE 210<br>BEVERLY HILLS, CA 90212 |             |                      | EXAMINER<br>MYINT, DENNIS Y |                        |
|  |             |                      | ART UNIT<br>2162            | PAPER NUMBER           |
|  |             |                      | MAIL DATE<br>06/28/2007     | DELIVERY MODE<br>PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

|                              |                               |                               |  |
|------------------------------|-------------------------------|-------------------------------|--|
| <b>Office Action Summary</b> | Application No.<br>10/676,800 | Applicant(s)<br>BERNAL ET AL. |  |
|                              | Examiner<br>Dennis Myint      | Art Unit<br>2162              |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 January 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3,5-12,14-21,23-30 and 32-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-12,14-21,23-30 and 32-38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. This communication is responsive to Applicant's Appeal Brief, filed on January 29, 2007.
2. Claims 1-3, 5-12, 14-21, 23-30 and 32-38 are pending in this application. Claims 1, 10, 19, 28, 37, and 38 are independent claims. Applicant filed Appeal Brief on January 29, 2007. Applicant's arguments have been fully considered by an appeal conference. Thus, the finality of the office action of August 28, 2006 is withdrawn.


In view of the Appeal Brief filed January 29, 2007, PROSECUTION IS HEREBY REOPENED. Applicant's arguments with respect to claims 1-3, 5-12, 14-21, 23-30 and 32-38 have been considered but are moot in view of the new ground(s) of rejection.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below.

  
JOHN BREENE  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100

***Claim Rejections - 35 USC § 101***

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 1-2, 10-11, 19-20, 28-29, 37, and 38 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 1-2 fails to produce tangible results and therefore is not statutory. This claimed subject matter lacks a practical application of a judicial exception (law of nature, abstract idea, naturally occurring article/phenomenon) since it fails to produce a tangible result. Specifically, the claimed subject matter does not produce a tangible result because the claimed subject matter fails to produce a result that is limited to having real world value rather than a result that may be interpreted to be abstract in nature as, for example, a thought, a computation, or manipulated data. More specifically, the claimed subject matter provides for "comparing data in application structure received with the statement" and "when there is a match between the data in application structure and data in optimization information in the bind-in structure, executing the statement with the optimization". However said steps/functions do not produce tangible results. Particularly, execution the statement with optimization information does not produce tangible results explicitly. This produced result remains in the abstract and, thus, fails to achieve the required status of having real world value.

Claims 10-11, 19-20, 28-29, 37, and 38 are rejected under 35 U.S.C. 101 on the same basis as claim 1.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claim 1, 3, 10, 12, 19, 21, 28, 30, 37, and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Agarwal et al., (hereinafter "Agarwal") (U.S. Patent Number 6351742) in view of Chow et al., (hereinafter "Chow") (U.S. Patent Number 5875334).

As per claim 1, Agarwal is directed to a method for input parameter binding, when performing bind-in of host variables (Agarwal, Column 4 Lines 8-17, i.e., ***bind variables***; Column 4 Lines 17-25, i.e., *This is not intended to be an exhaustive list of possible descriptions that can be passed to the optimizer. Other descriptions regarding*

*the characteristics, structure, or **type of the argument** can be used within the scope of the invention. The description of the arguments can be used in the present invention to more effectively estimate selectivity and cost, particularly for database statements containing variables whose values are unknown at compile-time) and teaches the limitations:*

“comparing data in an application structure received with the statement with optimization information in a bind-in structure” (Agarwal, Column 67 through Column 8 Line 22, i.e., *FROM Table3*

*WHERE Table3.col=arctan(:x)*

*This database statement queries for all entries from Table3 in which the values of the column Table3.col equal arctan(:x). Assume that there is no range limitation upon the bind variable ":x". For purposes of this example, the mere fact that :x is a bind variable does not provide further information that is useful for more accurately determining a selectivity value. However, the characteristics of the function "arctan()" does provide useful information that can be used. Specifically, it is known that the output of the arctan() function always produces a value between 0 and 360. Thus, the function or operator itself may have a range constraint (or other useful information) that can be used to calculate **selectivity**. The range constraint of the function arctan() is **matched against the collected statistics for the Table3.col column to determine the selectivity of the above predicate**); Note that the collected statistics are optimization information. Also note that in the said teaching of Agarwal, range constraint and bind variable "x" are used to determine a possible value of x because x could not be*

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known in advance at compile time. In other words, the method of Agarwal is comparing data in an application structure received with the statement (i.e., a possible value of x which is in an range of values) with the optimization information (collected statistics). Said possible value of x is compared to the optimization statistics (i.e., optimization formation), which are already in the in-memory bind-in structure. That the collected statistics are "optimization information" is taught in Column 2 Lines 16-19, i.e., *The cost of an execution plan can be estimated based upon the statistics and selectivity associated with terms within the SQL statement predicate*. In the instant application of the claimed invention, bind-in variables (i.e., data in an application structure received with the statement) are already known in advance. In that case, it is inferred that the method of Agarwal would compare said bind-in variables (i.e., data in an application structure received with the statement) with the optimization information in the memory in bind-in structures;

"wherein the optimization information includes **at least one** of **data type**, length, Coded Character Set Identifier, an array size, an indication of whether conversions are required, and an indication of whether the required conversions are valid" (Agarwal, Column 4 Lines 6-26, i.e., *A second category of information passed to the optimizer involves a description of the arguments in the database statement (104). For example, **the argument type** for each argument in the database statement can be passed to the optimizer. The following are examples of such argument types: literals, **bind variables**, columns, **type attributes**, NULL , none of the above. This is not intended to be an exhaustive list of possible descriptions that can be passed to the optimizer. Other*

*descriptions regarding the characteristics, structure, or type of the argument can be used within the scope of the invention. The description of the arguments can be used in the present invention to more effectively estimate selectivity and cost, particularly for database statements containing variables whose values are unknown at compile-time; Agarwal Column 5 Lines 50-61, i.e., This database statement queries for all entries from table emp\_table where the value of column "Table2.col" equals the bind variable :x. **The arguments to the "equal()" function are passed to the optimizer (i.e., the "Table2.col" and ":x" arguments). Since :x is a bind variable whose value is unknown at compile-time, the present invention further passes a description of the arguments to the optimizer. For example, the argument "type" of the arguments can be passed to the optimizer. The argument type of the Table2.col argument is "column" and the argument type of the :x argument is "bind variable").***

"when there is a match between the data in the application structure and data in the optimization information in the bind-in structure, executing the statement with the optimization information" (Agarwal, Column 4 Lines 41-44, i.e., *The optimizer then selects for execution plan having the lowest relative cost*).

Agarwal's examples teach selecting/fetching data from a data store by way SQL "select" statements. Agarwal does not explicitly recite SQL statement, "insert", even though it can be inferred from Agarwal's teachings. Therefore, Agarwal does not teach explicitly the limitation: "wherein the application structure includes data to be inserted into a data store".

On the other hand, Chow teaches the limitation:



“wherein the application structure includes data to be inserted into a data store”  
(Column 25 Lines 26-42, i.e., *The SELECT statement will be extracted into a separate compilation unit. Since only x is known by the pre-compiler as a host variable, there is only one SQLDA entry 704 created. A simulated, i.e., fake, SQLDA 162 is created, where two entries 705, 706 are **inserted** for local variables a and b. **This simulated SQLDA is used for the “bind-in/bind-out operation” of this extracted compilation unit. The term local SQLDA 162 will be used to refer to this simulated SQLDA because this SQLDA is local to each extracted SQL statement).***

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to add the feature of inserting data in application structure into a data store by way of bind-in/bind-outs, as taught by Chow, to the method of Agarwal so that, in the resultant method, application structure would include data to be inserted into a data store. One would have been motivated to do so in order to reduce the overhead of the preprocessor (Chow Column 7 Lines 38-41).

As per claim 3, Agarwal in view of Chow and further in view of Kaluskar teaches the limitation:

“at bind time, storing the optimization information in the bind-in structure”  
(Agarwal, Column 4 Lines 1-4, i.e., *According to this embodiment of the invention, at least two categories of information regarding variables or arguments in a database statement can be passed to an optimizer; Column 4 Lines 39-42, i.e., *The estimated cost may be generated by the use of the previously calculated selectivity value).**

Claims 10, 19, 28, and 38 are rejected on the same basis as claim 1.

Claim 12 is rejected on the same basis claim 3.

Claim 21 is rejected on the same basis as claim 3.

Claim 30 is rejected on the same basis as claim 3.

8. Claim 2, 9, 11, 18, 20, 27, 29, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Agarwal in view of Chow and further in view of Kaluskar (U.S. Patent Number 6985904).

As per claim 2, Agarwal in view of Chow teaches the feature of comparing application data with optimization information as presented above in regard to claim 1. However, Agarwal in view of Chow does not explicitly teach the limitation: "when there is not a match between the data (in the application structure) and the optimization information, regenerating optimization information".

On the other hand, Kaluskar teaches the limitation:

"when there is not a match between the data (in the application structure) and the optimization information, regenerating optimization information" (Column 3 Line 57-64, i.e., *If a match is not found, then compilation proceeds as in Fig. 1*).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to add the feature of regeneration optimization information when there is not a match between the data (in application structure) and the optimization, as

taught by Kaluskar, so that the resultant method would comprise regenerating optimization when there is not a match between the data in the application structure and the optimization information. One would have been motivated to do so in order to accomplishment some performance enhancement (Kaluskar, Column 1 Lines 37-39).

Referring to claim 9, Kaluskar teaches the limitation:

“when returning a handle to a cursor to a result set from a stored procedure to an application, recalculating the optimization information” (Column 3 Line 57-64, i.e., *If a match is not found, then compilation proceeds as in Fig. 1*). Note that when a stored procedure returns a cursor to a result set to an application, said cursor will be a new cursor in the method and system of Kaluskar in view of Crone and it would have been calculated/generated as new following the conventional way of hard parsing. In the specification of this application, such situation arises when the caller of the stored procedure is a distributed application, which does not provide a SQLDA (Specification, Paragraph 0074).

Claim 11 is rejected on the same basis as claim 2.

Claim 18 is rejected on the same basis as claim 9.

Claim 20 is rejected on the same basis as claim 2.

Claim 27 is rejected on the same basis as claim 9.

Claim 29 is rejected on the same basis as claim 2.

Claim 36 is rejected on the same basis as claim 9.

9. Claim 5, 14, 23, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Agarwal in view of Chow and further in view of Desai et al., (hereinafter "Desai") (U.S. Patent Number 6567816).

Referring to claim 5, Agarwal in view of Chow does not explicitly disclose the limitations: "for fixed length data, storing an increment length by which a data pointer that is pointing to data in an application program area is to be incremented to find a location of an next data value and calculating the location of the next data value by adding the increment length to the data pointer."

Desai teaches the limitations:

"for fixed length data, storing an increment length by which a data pointer that is pointing to data in an application program area is to be incremented to find a location of an next data value and calculating the location of the next data value by adding the increment length to the data pointer" (Column 5 Line 34-49). Desai teaches a method and system for extracting data from database records, wherein offsets from the starting of the row in memory are used to determine corresponding column name by adding to the said column offset the length of fixed columns (Column 5 Line 34-49).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art of add the feature of employing offsets (increments) to locate (point to) next column (item/record) as taught by Desai to the method and system taught by Agarwal in view of Chow so that the resultant method would constitute the

method of claim 1, which further comprises, for fixed length data, storing an increment length by which a data pointer that is pointing to data in an application program area is to be incremented to find a location of a next data value and calculating the location of the next data value by adding the increment length to the data pointer. One would have been motivated to do so simply to locate a memory location, which is well known in the art.

Claim 14, 23, and 32 are rejected on the same basis as claim 5.

10. Claim 6-8, 15-17, and 24-26, and 33-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Agarwal in view of Chow and further in view of Jordan II et al. (hereinafter "Jordan") (U.S. Patent Number 5875442).

Referring to claim 6, Agarwal in view of Chow does not explicitly disclose the limitation: "for distributed computing, at a client computer, calculating a location of data in a client communications buffer".

Jordan teaches the limitation:

"for distributed computing, at a client computer, calculating a location of data in a client communications buffer" (Figure 3 and Column 4 Line 12-29). Jordan teaches a method and system for accessing a remote database, wherein location of data in communication buffer are calculated (Figure 3 and Column 4 Line 12-29).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to add the feature of calculating memory location in a

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communication buffer as taught by Jordan II. et al. to the method and system of Agarwal in view of Chow as applied to claim 1 above so that the resultant method would further comprise, for distributed processing, at a client computer, calculating a location of data in a client communications buffer. One would have been motivated to do so in order to *provide dynamic buffering to enhance a database server*" (Jordan, Column 1 Line 26-29).

Claim 7 and 8 are rejected on the same basis as claim 6.

Claims 15-17 are rejected on the same basis claim 6-8 respectively.

Claims 24-26 are rejected on the same basis claim 6-8 respectively.


Claims 33-35 are rejected on the same basis claim 6-8 respectively.


**Conclusion**

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis Myint whose telephone number is (571) 272-5629. The examiner can normally be reached on 8:30AM-5:30PM Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Breene can be reached on (571) 272-4107. The fax phone number for the organization where this application or proceeding is assigned is 571-273-5629.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
JOHN BREENE  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100  
ET

  
Dennis Myint  
Examiner  
AU-2162